MODULE IX(A) - INCINERATION - FINAL OPERATION

This module, plus Module IX(B) for short term incineration, covers the four major phases of incinerator operation: (1) shakedown; (2) trial burn; (3) post-trial burn operation; and (4) final operation. This module provides the conditions for final operation. The short term incineration module covers the shakedown, trial burn and post-trial burn periods.

The incinerator consists of 2 rotary kilns (a primary kiln and a burner kiln) followed by a secondary combustion chamber. The maximum thermal input to the system is 200 x 10^6 Btu/hr. Combustion gases, after exiting the secondary chamber, pass through a quench chamber, a waste heat boiler, a dry scrubber, a baghouse, a packed bed scrubber, and exit out the stack. The system is new and will be installed under this permit.

IX(A).A. CONSTRUCTION AND MAINTENANCE

IX(A).A.1. The Permittee shall construct and maintain the incineration system in accordance with the design plans and specifications contained in Attachment 15.

IX(A).A.2. All process monitors, required pursuant to Condition IX(A).D. shall be equipped with alarms operated to warn of deviation from the limits specified in Condition IX(A).D.

IX(A).A.3. Modification to the design plans and specifications for the incineration system shall be allowed only in accordance with Condition II.B.2. and I.D.

IX(A).A.4. As part of the operating record, the Permittee shall maintain a current Instrument List for all of the instruments used to monitor the primary kiln, burner kiln, secondary combustion chamber, dry scrubber, baghouse, ID fan, wet scrubber, and stack.

IX(A).A.5. The Permittee shall maintain the incineration system such that when operated in accordance with the requirements in this permit, it will meet the performance standards specified in Condition IX(A).B.

IX(A).A.6. The Permittee shall not feed hazardous wastes to the incinerator until such time that the Permittee has demonstrated compliance with the certification of construction or modification requirement as specified in Condition I.R.

IX(A).B. **PERFORMANCE STANDARDS**

All numerical values associated with permit conditions in Module IX(A) which are marked with an asterisk (*) are considered tentative and may be modified after a revised trial burn plan has been submitted, or after the trial burn results have been evaluated by the Executive Secretary in accordance with R450-8-15.5(c). The Executive Secretary reserves the right to replace these values with any that are determined to be more protective of human health and the environment.

IX(A).B.1. The incinerator shall achieve a destruction and removal efficiency (DRE) of at least 99.99% for each of the principal organic hazardous constituents (POHCs) designated below and in Condition IX(B).L.

- 1,2,4-trichlorobenzene
- hexachloroethane
- polychlorinated biphenyls
- toluene

The DRE shall be calculated by the method specified in R450-8-15.4(a)(1).

IX(A).B.2. The incinerator shall not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected to 7% oxygen in accordance with the formula given below.

$$P_c = P_m \times \frac{14}{(21-Y)}$$

Where: P_c = corrected concentration of particulate matter

P_m = measured concentration of particulate matter

Y = measured O_2 concentration (%) on a dry basis

IX(A).B.3. The Permittee shall control hydrogen chloride (HCl) emissions, such that the rate of emissions is no greater than the larger of either 1.8 kilograms per hour (4.0 pounds per hour) or one percent of the HCl in the combustion gas prior to entering any pollution control equipment.

IX(A).B.4. The Permittee shall control emissions of products of incomplete combustion from the stack such that the carbon monoxide (CO) level in the stack, corrected to 7% oxygen in accordance with the formula given below, shall not exceed 100 ppmv, dry basis, over a one hour rolling average and shall not exceed 500 ppmv, dry basis, for more than one minute at any time.

$$CO_c = CO_m \times \frac{14}{(21-Y)}$$

Where: CO_c = corrected CO concentration, ppmv, dry basis

CO_m = measured CO concentration, ppmv, dry basis

Y = measured O_2 concentration (%), dry basis

IX(A).B.5. The Permittee shall control metal emissions from the stack such that the rate of emissions for each metal is no greater than the maximum allowable emission rate specified herein:

Metal	Maximum Emission rate (lb/hr)
Antimony	17.01
Arsenic	0.0448
Barium	300.00
Beryllium	0.0024
Cadmium	0.0787
Chromium (VI)	0.0189
Lead	5.10
Mercury	4.54
Nickel	300.00
Selenium	226.76
Silver	170.07
Thallium	17.01

IX(A).B.6. Compliance with the operating conditions specified in Condition IX(A).D. of this permit shall be regarded as compliance with the required performance standards identified in Conditions IX(A).B.1 through IX(A).B.5. However, if it is determined that compliance with the operating conditions in IX(A).D. is not sufficient to ensure compliance with the performance standards specified in Conditions IX(A).B.1. through IX(A).B.5., the permit may be modified, revoked, or reissued, pursuant to R450-3-9.

IX(A).B.7. The Permittee, when feeding hazardous wastes and/or other wastes (e.g., medical waste, industrial waste, exempt hazardous waste, site generated non-hazardous waste) to the incinerator, shall comply with all incinerator operating conditions established in this permit.

IX(A).C. LIMITATIONS ON WASTE FEED

IX(A).C.1. During final operation covered by Module IX(A) of this permit, the Permittee may feed only the following hazardous wastes to the incinerator subject to the requirements of this permit.

D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012
D013 D014 D015 D016 D017 D018 D019 D020 D021 D022 D023 D024
D025 D026 D027 D028 D029 D030 D031 D032 D033 D034 D035 D036
D037 D038 D039 D040 D041 D042 D043

F001 F002 F003 F004 F005 F006 F007 F008 F009 F010 F011 F012
F019 F024 F025 F032 F034 F035 F037 F038 F039 F999

K001 K002 K003 K004 K005 K006 K007 K008 K009 K010 K011 K013
K014 K015 K016 K017 K018 K019 K020 K021 K022 K023 K024 K025
K026 K027 K028 K029 K030 K031 K032 K033 K034 K035 K036 K037
K038 K039 K040 K041 K042 K043 K046 K048 K049 K050 K051 K052
K060 K061 K062 K064 K065 K066 K069 K071 K073 K083 K084 K085
K086 K087 K088 K090 K091 K093 K094 K095 K096 K097 K098 K099
K100 K101 K102 K103 K104 K105 K106 K107 K108 K109 K110 K111
K112 K113 K114 K115 K116 K117 K118 K123 K124 K125 K126 K136
K141 K142 K143 K144 K145 K147 K148 K149 K150 K151 K156 K157
K158 K159 K160 K161

P001 P002 P003 P004 P005 P006 P007 P008 P010 P011 P012 P013
P014 P015 P016 P017 P018 P020 P021 P022 P023 P024 P026 P027
P028 P029 P030 P031 P033 P034 P036 P037 P038 P039 P040 P041
P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P054 P056

P057 P058 P059 P060 P062 P063 P064 P066 P067 P068 P069 P070
P071 P072 P073 P074 P075 P076 P077 P078 P082 P084 P085 P087
P088 P089 P092 P093 P094 P095 P096 P097 P098 P099 P101 P102
P103 P104 P105 P106 P107 P108 P109 P110 P111 P113 P114 P115
P116 P118 P119 P120 P121 P122 P123 P127 P128 P185 P188 P189
P190 P191 P192 P194 P196 P197 P198 P199 P201 P202 P203 P204
P205

U001 U002 U003 U004 U005 U006 U007 U008 U009 U010 U011 U012
U014 U015 U016 U017 U018 U019 U020 U021 U022 U023 U024 U025
U026 U027 U028 U029 U030 U031 U032 U033 U034 U035 U036 U037
U038 U039 U041 U042 U043 U044 U045 U046 U047 U048 U049 U050
U051 U052 U053 U055 U056 U057 U058 U059 U060 U061 U062 U063
U064 U066 U067 U068 U069 U070 U071 U072 U073 U074 U075 U076
U077 U078 U079 U080 U081 U082 U083 U084 U085 U086 U087 U088
U089 U090 U091 U092 U093 U094 U095 U097 U098 U099 U101 U102
U103 U105 U106 U107 U108 U109 U110 U111 U112 U113 U114 U115
U116 U117 U118 U119 U120 U121 U122 U123 U124 U125 U126 U127
U128 U129 U130 U131 U132 U134 U135 U136 U137 U138 U139 U140
U141 U142 U143 U144 U145 U146 U147 U148 U149 U150 U151 U152
U153 U154 U155 U156 U157 U158 U159 U161 U162 U163 U164 U165
U166 U167 U168 U169 U170 U171 U172 U173 U174 U176 U177 U178
U179 U180 U181 U182 U183 U184 U185 U186 U187 U188 U189 U190
U191 U192 U193 U194 U196 U197 U200 U201 U202 U203 U204 U205
U206 U207 U208 U209 U210 U211 U213 U214 U215 U216 U217 U218
U219 U220 U221 U222 U223 U225 U226 U227 U228 U235 U236 U237
U238 U239 U240 U243 U244 U246 U247 U248 U249 U271 U277 U278
U279 U280 U328 U353 U359 U364 U365 U366 U367 U372 U373 U375
U376 U377 U378 U379 U381 U382 U383 U384 U385 U386 U387 U389
U390 U391 U392 U393 U394 U395 U396 U400 U401 U402 U403 U404
U407 U409 U410 U411

The Permittee may also feed to the incinerator non-hazardous waste including medical waste, industrial waste, household hazardous waste, site generated waste, non-regulated PCB waste, and CERCLA waste with no accompanying EPA waste code.

IX(A).C.2.a. The following shall not be fed to the incinerator at any time:

- Radioactive wastes/materials
- DOT Forbidden, Class A, and Class B explosives
- Shock sensitive wastes/materials

IX(A).C.2.b. The following wastes may only be fed into the incinerator packaged in lab packs and introduced through the ram feeder:

- Pyrophoric wastes/materials
- Water reactive wastes/materials

IX(A).C.2.c. The following shall not be fed to the incinerator at any time:

- Waste codes F020, F021, F022, F023, F026, F027, and F028

The Permittee may pursue approval to incinerate dioxin-listed waste codes (F020, F021, F022, F023, F026, F027, and F028), but any such request for approval must comply with the following:

IX(A).C.2.c.i. The request for approval shall be considered a class 3 permit modification subject to all applicable procedures in Condition I.D.5.

IX(A).C.2.c.ii. The modification request shall include a plan detailing two separate tests that must be successfully conducted before final approval to incinerate dioxin-listed wastes can be obtained.

IX(A).C.2.c.iii. The first or DRE test shall be for the purpose of demonstrating a DRE equal to or greater than 99.9999% on all POHCs. If the Permittee successfully demonstrates a DRE of 99.9999% or greater on all POHCs specified in Condition IX(A).B. on all runs of all conditions of the initial trial burn, this shall be considered the first or DRE test.

IX(A).C.2.c.iv. If the initial trial burn does not successfully demonstrate a DRE of 99.9999% or greater on all POHCs specified in Condition IX(A).B. on all runs of all conditions, a DRE test as referenced in Condition IX(A).C.2.c.iii. shall be performed. The designated POHCs shall be those determined to be more difficult to incinerate than tetra-, penta-, and hexa-chlorodibenzo-p-dioxins and dibenzofurans. The test plan must include all applicable EPA-approved trial burn test methods and procedures in effect at the time of the request.

IX(A).C.2.c.v. The Executive Secretary may require the Permittee to demonstrate compliance with other performance standards contained in this permit when conducting this DRE test.

IX(A).C.2.c.vi. The Executive Secretary may require the Permittee to perform additional risk assessment studies based upon the measured emissions from the DRE test.

IX(A).C.2.c.vii. The second test that must be detailed in the class 3 modification request may only be conducted if the Permittee successfully demonstrates to the Executive Secretary that at least 99.9999% DRE was obtained on all of the POHCs on all runs of all conditions during the DRE test burn or the initial trial burn. The purpose of the second test, the dioxin risk test, is to demonstrate that while burning dioxin-listed wastes, the dioxin/furan emissions from the incinerator are below levels that pose an unacceptable risk to human health and the environment. The Permittee may only incinerate dioxin-listed wastes for the purpose of conducting this dioxin risk test.

IX(A).C.2.c.viii. The description of this dioxin risk test in the modification request must include at a minimum the following:

- Details of all applicable EPA-approved test methods and procedures that will be used during the test.
- Provisions for ensuring that the dioxin-listed wastes fed during the test are representative of the dioxin-listed wastes that the Permittee expects to feed during routine operation.
- Procedures to conduct a risk assessment based upon the measured dioxin/furan emission rates as directed by the Executive Secretary.
- Management procedures for dioxin-listed wastes at the facility prior to incineration.
- If applicable, specific incinerator operating conditions when feeding dioxin-listed wastes.

IX(A).C.2.c.ix. No final approval to incinerate dioxin-listed wastes can be granted unless the Permittee successfully conducts both tests as described in this condition and demonstrates through approved risk assessment procedures that burning dioxin-

listed wastes does not pose an unacceptable risk to human health and the environment.

IX(A).C.3. Total organic chlorine feed to the incinerator for all feed mechanisms combined shall not exceed 4850 lb/hr.*

IX(A).C.4. The Permittee shall limit the heat input rate of containerized waste to a maximum of 4.8 MMBTU per charge of container(s).*

IX(A).C.5. The maximum thermal input to the incineration system (kilns and secondary chamber combined) for any combination of waste and/or fuel shall not exceed 200 x 10^6 Btu per hour based upon a 60 minute rolling average.*

IX(A).C.6. The feed rate of bulk solids to the primary kiln shall not exceed 42,000 lb/hr based upon a 60 minute rolling average. Additionally, the feed rate of bulk solids to the primary kiln shall not exceed 50,000 lb/hr for more than five consecutive 1-minute averages. The 60 minute rolling average feed rate of bulk solids to the primary kiln shall be calculated in accordance with 40 CFR § 266.102 (e)(6)(i)(B).*

IX(A).C.7. The feed rate of energetic liquid wastes to the primary kiln through burner 991-BN-009 shall not exceed 3,000 lb/hr for more than five minutes or more than 3,150 lb/hr at any time.*

IX(A).C.8. Reserved

IX(A).C.9. The feed rate of containers through the burner kiln ram feeder shall not exceed 10,000 lb/hr. The Permittee shall determine the time (in minutes) which must elapse before the next container may be fed by dividing the weight of the most recently fed container by 10,000 pounds and multiplying by 60 minutes. The Permittee shall not feed another container to the burner kiln until this time period has elapsed.*

IX(A).C.10. The feed rate of bulk solids through the burner kiln auger feeder shall not exceed 12,000 lb/hr based upon a 60 minute rolling average. Additionally, the feed rate of bulk solids through the burner kiln auger feeder shall not exceed 15,000 lb/hr for more than five consecutive 1-

minute averages. The 60 minute rolling average feed rate of bulk solids through the burner kiln auger feeder shall be calculated in accordance with 40 CFR § 266.102(e)(6)(i)(B).*

IX(A).C.11. The feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall not exceed 8,000 lb/hr based upon a 60 minute rolling average. Additionally, the feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall not exceed 10,000 lb/hr for more than five consecutive 1-minute averages. The 60 minute rolling average feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall be calculated in accordance with 40 CFR § 266.102 (e)(6)(i)(B).*

IX(A).C.12. The feed rate of energetic liquid wastes to the burner kiln through burner 992-BN-010 shall not exceed 3,333 lb/hr for more than five minutes or more than 3,500 lb/hr at any time.*

IX(A).C.13. The total feed rate of aqueous wastes to the burner kiln shall not exceed 23,000 lb/hr for more than five minutes or more than 24,000 lb/hr at any time. Additionally, the feed rate of aqueous wastes through any of the burner kiln aqueous wastes nozzles 992-IN-001, 992-IN-002, or 992-IN-003 shall not exceed 16 gpm at any time.*

IX(A).C.14. The feed rate of gaseous waste to the burner kiln shall not exceed 400 lb/hr for more than five minutes or more than 420 lb/hr at any time.*

IX(A).C.15 The feed rate of energetic liquid wastes to the secondary combustion chamber through the SCC burner 993-BN-003 shall not exceed 5,000 lb/hr for more than five minutes or more than 5,200 lb/hr at any time. The feed rate of energetic liquid wastes through the SCC burner 993-BN-004 shall not exceed 5,000 lb/hr for more than five minutes or more than 5,200 lb/hr at any time.*

IX(A).C.16. The total feed rate of aqueous wastes to the secondary combustion chamber shall not exceed 14,285 lb/hr for more than five minutes or more than 15,000 lb/hr at any time. Additionally, the feed rate of aqueous wastes through any of the SCC aqueous wastes nozzles 993-IN-001, 993-IN-002,

993-IN-003, or 993-IN-004 shall not exceed 7.5 gpm at any time.*

IX(A).C.17. The turndown ratio for each burner in the secondary combustion chamber shall not exceed 3.5 to 1 when operating with energetic liquid wastes. The turndown ratio for the burner in the burner kiln shall not exceed 5 to 1 when operating with energetic liquid wastes. The turndown ratio for the burner in the primary kiln shall not exceed 3.3 to 1 when operating with energetic liquid wastes.*

IX(A).C.18. The viscosity of energetic liquid wastes as fed to the secondary combustion chamber shall not exceed 150 SSU. The viscosity of energetic liquid wastes as fed to the burner kiln shall not exceed 150 SSU. The viscosity of energetic liquid wastes as fed to the primary kiln shall not exceed 150 SSU.

IX(A).C.19. Atomizing fluid pressure to the energetic liquid wastes in the secondary combustion chamber burners shall be maintained above 70 psig. Atomizing fluid pressure to the energetic liquid wastes in the burner kiln burner shall be maintained above 50 psig. Atomizing fluid pressure to the energetic liquid wastes in the primary kiln burner shall be maintained above 65 psig.

IX(A).C.20. The Permittee shall not exceed the maximum metal feed rates to the incinerator as specified herein

Metal	Maximum Feed rate (lb/hr)
Antimony	17.01
Arsenic	56.03
Barium	300.00
Beryllium	4.72
Cadmium	9.37
Chromium (total)	75.59
Lead	300.00
Mercury	12.96
Nickel	300.00
Selenium	226.76
Silver	170.07
Thallium	17.01

The feed rates for arsenic, beryllium, cadmium, and chromium shall be calculated on a 24-hour rolling average basis as provided in 40 CFR §

266.102(e)(6)(ii). None of the one hour block average feed rates used in calculating the 24-hour rolling average for arsenic, beryllium, cadmium, and chromium shall, at any time, exceed ten times the allowable feed rate specified above. The feed rates for antimony, barium, lead, mercury, nickel, selenium, silver, and thallium shall be calculated on an hourly rolling average basis as provided in 40 CFR § 266.102(e)(6)(i)(B). Compliance with the metals feed limitations shall be demonstrated through waste analysis of the incinerator feed as required by Condition II.D.*

IX(A).C.21. Wastes shall not be fed to the primary kiln unless the Permittee complies with the operating conditions specified under Condition IX(A).D.1 and IX(A).D.3. through IX(A).D.15. Wastes shall not be fed to the burner kiln unless the Permittee complies with the operating conditions specified under Conditions IX(A).D.2. through IX(A).D.15. Wastes shall not be fed to the secondary combustion chamber unless the Permittee complies with the operating conditions specified under Conditions IX(A).D.3. through IX(A).D.15.

IX(A).C.22. Throughout operation, the Permittee shall conduct sufficient analysis of the waste feed, in accordance with the waste analysis requirements, Condition II.D., to verify that the waste fed to the incinerator is within the physical and chemical composition limits specified in this permit.

IX(A).C.23. The Permittee shall not feed hazardous waste to the incinerator until such time that the Permittee has demonstrated compliance with the certification of construction or modification requirement as specified in Condition I.R.

IX(A).D. **OPERATING REQUIREMENTS**

The Permittee shall feed the wastes described in Condition IX(A).C.1. to the primary kiln, burner kiln, or secondary combustion chamber, only under the following conditions:

IX(A).D.1.a. The exit gas temperature from the primary kiln shall be maintained above 1100°F. This temperature is defined as the temperature reading

from 991-TE-138A or 991-TE-138B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continously.*

IX(A).D.1.b. The exit gas temperature from the primary kiln shall be maintained below 1500°F. This temperature is defined as the temperature reading from 991-TE-138A or 991-TE-138B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.*

IX(A).D.2.a. The temperature of the exit gas from the burner kiln shall be maintained above 1300°F. This temperature is defined as the temperature reading from 992-TE-172A or 992-TE-172B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.*

IX(A).D.2.b. The temperature of the exit gas from the burner kiln shall be maintained below 1750°F. This temperature is defined as the temperature reading from 992-TE-172A or 992-TE-172B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.*

IX(A).D.3.a. The temperature of the exit gas from the secondary combustion chamber shall be maintained above 2012°F. This temperature is defined as the temperature reading from 993-TE-232A or 993-TE-232B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.*

IX(A).D.3.b. The temperature of the exit gas from the secondary combustion chamber shall be maintained below 2325°F. This temperature is defined as the temperature reading from 993-TE-232A or 993-TE-232B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This

temperature shall be monitored and recorded continuously.*

IX(A).D.4. Carbon monoxide (CO) concentration in the stack exhaust gas, corrected to seven percent (7%) oxygen in accordance with the formula specified in Condition IX(A).B.4., shall not exceed 100 ppmv, dry basis, over a one (1) hour rolling average and shall not exceed 500 ppmv, dry basis, for more than one minute at any time. The corrected CO concentration in the stack and the one (1) hour rolling average shall be monitored and recorded on a continuous basis.*

IX(A).D.5. Combustion gas flowrate exiting the Wet Scrubber (998-FE-416) shall not exceed 110,000 acfm except as allowed by Condition IX(A).G.1.h. The combustion gas flowrate shall be monitored and recorded on a continuous basis.*

IX(A).D.6. The Permittee shall control fugitive emissions from the combustion zones (primary kiln, burner kiln, and secondary combustion chamber) of the incinerator by maintaining pressure in the combustion zones at values not to exceed -0.1 inches water column except as allowed by Conditions IX(A).G.1.hh. through jj. The differential pressure between each combustion zone and atmosphere shall be monitored and recorded on a continuous basis for the primary kiln, burner kiln, and secondary combustion chamber.

IX(A).D.7. The pH of the scrubber recirculating liquid shall be maintained above a pH of 3. The pH shall be monitored and recorded continuously.*

IX(A).D.8. The baghouse shall be operated with a minimum of seven compartments on-line. Additionally, no more than one of these seven compartments may be isolated as part of the cleaning cycle at any time. The baghouse shall be operated without a positive signal from any of the broken bag detectors except as allowed by Condition IX(A).G.1.ll. The detectors shall be operated continuously and their output recorded continuously.*

IX(A).D.9. The Permittee shall maintain the stoichiometric ratio of calcium hydroxide or calcium hydroxide and sodium hydroxide in the dry scrubber to the

chlorine in the feed above 1.25 except as provided in IX(A).G.1.mm. This ratio, as well as the lime slurry feed rate, the sodium hydroxide solution feed rate (if NaOH is used in the Dry Scrubber), and the lime slurry concentration shall be monitored and recorded continuously.*

IX(A).D.10. The Permittee shall maintain the temperature of the combustion gas entering the dry scrubber below 750°F except as provided in Condition IX(A).G.1.nn. This temperature shall be monitored and recorded continuously.*

IX(A).D.11. The Permittee shall maintain the temperature of the combustion gas entering the baghouse below 400°F. This temperature shall be monitored and recorded continuously.*

IX(A).D.12. The Permittee shall maintain the wet scrubber recirculating liquor flow to scrubber SO-007 above 300 gpm except as provided by Condition IX(A).G.1.rr. The Permittee shall maintain the wet scrubber recirculating liquor flow to scrubber SO-020 above 300 gpm except as provided by Condition IX(A).G.1.ss. The liquor flow rate to each wet scrubber shall be monitored and recorded continuously.*

IX(A).D.13. The Permittee shall maintain the temperature of the combustion gas exiting scrubber SO-007 below 180°F. The Permittee shall maintain the temperature of the combustion gas exiting scrubber SO-020 below 180°F. The temperature of the combustion gas exiting each wet scrubber shall be monitored and recorded continuously.*

IX(A).D.14 The Permittee shall maintain the total dissolved solids in the recirculating liquor for the wet scrubbers below 10%. The total dissolved solids in the recirculating liquor for the wet scrubbers shall be monitored and recorded continuously.*

IX(A).D.15 Reserved

IX.(A).E. INSPECTION REQUIREMENTS

IX(A).E.1. On at least a daily basis, the Permittee shall thoroughly visually inspect the incinerator and associated equipment (including pumps, valves,

piping, conveyors, feed systems, etc.) for leaks, spills, fugitive emissions, deterioration, excessive wear, and signs of tampering.

IX(A).E.2. On at least a daily basis, the Permittee shall thoroughly visually inspect the recorded data specified in IX(A).F.3.for completeness and for deviations from the operational conditions specified in IX(A).F.3.

IX(A).E.3. The Permittee shall comply with Attachment 4.

IX(A).F. MONITORING REQUIREMENTS

IX(A).F.1. The feed rate of pumpable or gaseous materials, including waste feed and auxiliary fuel, shall be monitored and recorded continuously. The feed rates shall be quantified in pounds per hour (lb/hr).

IX(A).F.2. The feed rate of non-pumpable wastes shall be monitored and recorded continuously or on a periodic basis equal to the charging cycle. The feed rates shall be quantified in pounds per hour (lbs/hr).

IX(A).F.3. The Permittee shall maintain, calibrate, and operate the monitoring equipment used to obtain the data specified below and record the data specified below while incinerating hazardous waste:

System Parameters		Instrument No. or DCS Tag No.	Units/Recording Process
1.	Reserved		
2.	Primary Kiln Exit Gas Temperature	Thermocouple 991-TE-138A and/or B	°F, continuous
3.	Burner Kiln Exit Gas Temperature	Thermocouple 992-TE-172A and/or B	°F, continuous
4.	SCC Exit Gas Temperature	Thermocouple 993-TE-232A and/or B	°F, continuous
5.	Combustion Gas Flowrate	S-type Pitot Tube 998-FE-416	ACFM, continuous
6.	Carbon Monoxide Continuous Emission Monitor	Extractive NDIR 998-AE-287 and/or 998-AE-1287	ppm, continuous (0-200 ppm)

System Parameters		Instrument No. or DCS Tag No.	Units/Recording Process
7.	Carbon Monoxide Continuous Emission Monitor	Extractive NDIR 998-AE-287A and/or 998-AE-1287A	ppm, continuous (0-3000 ppm)
8.	Stack Oxygen Continuous Emission Monitor	Paramagnetic 998-AE-290 and/or 998-AE-1290	%, continuous
9.	Bulk Solids Feed Rate to Primary Kiln	Solids Feed Weighbelt 991-WE-669	lb/hr, continuous
10.	Energetic Liquid Wastes Feed Rate to Primary Kiln	Mass Flowmeter 991-FE-111	lb/hr, continuous
11.	Reserved		
12.	Reserved		
13.	Bulk Solids (Auger) Feed Rate to Burner Kiln	Weight Accumulator 992-WIC-169B	lb/hr, continuous
14.	Bulk Solids Feed Rate to Burner Kiln Auger (from Unit 252)	Weigh Belt 992-WIC-169	lb/hr, continuous
15.	Repackaged Solids Feed Rate to Burner Kiln Auger (from Skip Hoist)	Skip Hoist Scale 992-WI-716A	lb/hr, continuous
16.	Containers (RAM) Feed Rate to Burner Kiln	Roller Belt Scale 992-WI-705A	lb/hr, periodic basis equal to the charging cycle
17.	Sludge Feed Rate to Burner Kiln (from Tank Farm)	Mass Flowmeter 992-FE-149	lb/hr, continuous
18.	Sludge Feed Rate to Burner Kiln (from Special Handling Bay)	Mass Flowmeter 992-FE-329	lb/hr, continuous
19.	Energetic Liquid Wastes Rate to Burner Kiln (from Tank Farm)	Mass Flowmeter 992-FE-153	lb/hr, continuous
20.	Energetic Liquid Wastes Rate to Burner Kiln (from Special Handling Bay)	Mass Flowmeter 992-FE-337	lb/hr, continuous
21.	Total Aqueous Wastes Feed Rate to Burner Kiln (from Tank Farm)	Mass Flowmeter 992-FE-162	lb/hr, continuous
22.	Total Aqueous Wastes Feed Rate to Burner Kiln (from Special Handling Bay)	Mass Flowmeter 992-FE-346	lb/hr, continuous

System Parameters		Instrument No. or DCS Tag No.	Units/Recording Process
23.	Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-001	Volumetric Flowmeter 992-FE-347	gpm, continuous
24.	Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-002	Volumetric Flowmeter 992-FE-348	gpm, continuous
25.	Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-003	Volumetric Flowmeter 992-FE-349	gpm, continuous
26.	Energetic Liquid Wastes Feed Rate to SCC	Mass Flowmeters 993-FE-193 993-FE-203	lb/hr, continuous
27.	Total Aqueous Wastes Feed Rate to SCC	Mass Flowmeter 993-FE-226	lb/hr, continuous
28.	Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-001	Volumetric Flowmeter 993-FE-235	gpm, continuous
29.	Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-002	Volumetric Flowmeter 993-FE-236	gpm, continuous
30.	Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-003	Volumetric Flowmeter 993-FE-237	gpm, continuous
31.	Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-004	Volumetric Flowmeter 993-FE-238	gpm, continuous
32.	Gaseous Waste Feed Rate to Burner Kiln	Volumetric Flowmeter (converted to mass flow rate) 538-FE-032	lb/hr continuous
33.	Primary Kiln Pressure	Pressure Transmitter 991-PT-135	Inches W.C., continuous
34.	Burner Kiln Pressure	Pressure Transmitter 992-PT-175	Inches W.C., continuous
35.	SCC Pressure	Pressure Transmitter 993-PT-233	Inches W.C., continuous
36.	Stoichiometric Ratio of hydroxide (calcium or calcium and sodium)to Chlorine	000-AFI-114	unitless, continuous
37.	Lime Slurry Feed Rate to Dry Scrubber	Volumetric Flowmeters 996-FE-512 996-FE-522 996-FE-532	gpm, continuous
37A.	Sodium Hydroxide Solution Feed Rate to Dry Scrubber	Volumetric Flowmeter 996-FE-212	gpm, continuous
38.	Carbon Dosage Rate to APCS	Hoist Load Cell 996-WE-001	lb/hr, continuous

System Parameters		Instrument No. or DCS Tag No.	Units/Recording Process
39.	Dry Scrubber Inlet Gas Temperature	Thermocouple 996-TIR-291 Temperature Switch 996-TSHH-291	°F, continuous on/off, change in state
40.	Baghouse Inlet Gas Temperature	Thermocouple 996-TIC-501 Temperature Switch 996-TSHH-259	°F, continuous on/off, change in state
41.	Recirculating Liquor Flow Rate to Scrubber SO-007	Flowmeter 998-FE-294	gpm, continuous
42.	Recirculating Liquor Flow Rate to Scrubber SO-020	Flowmeter 998-FE-443	gpm, continuous
43.	Total Dissolved Solids in Recirculating Liquor for Wet Scrubbers	Conductivity Probe 998-AE-303	%, continuous
44.	pH of Scrubber Recirculating Liquor	pH Meter 998-AE-280	pH, continuous
45.	Wet Scrubber SO-007 Gas Exit Temperature	Thermocouple 998-TE-903 Temperature Switch 998-TSHH-285	°F, continuous on/off, change in state
46.	Wet Scrubber SO-020 Gas Exit Temperature	Thermocouple 998-TE-904 Temperature Switch 998-TSHH-518	°F, continuous on/off, change in state
47.	Broken Bag Detectors	Analyzer Probes 997-AAH-261 997-AAH-262 997-AAH-263 997-AAH-264 997-AAH-265 997-AAH-266 997-AAH-267 997-AAH-268	on/off, change in state
48.	Atomizing Fluid Pressure (Primary Kiln Energetic Liquid Wastes)	Pressure Switch 991-PSL-568	on/off, change in state
49.	Atomizing Fluid Pressure (Burner Kiln Energetic Liquid Wastes)	Pressure Switch 992-PSL-592	on/off, change in state
50.	Atomizing Fluid Pressure (SCC Energetic Liquid Wastes)	Pressure Switch 993-PSL-629 and 993-PSL-630	on/off, change in state
51.	Status of I.D. Fan	Electrical Contact 998-EL-573	on/off, change in state

System Parameters		Instrument No. or DCS Tag No.	Units/Recording Process
52.	Loss of Primary Kiln, Burner Kiln, or SCC Burner Flame	Flame Detectors 991-BAL-134 992-BAL-177 993-BAL-222 993-BAL-224	on/off, change in state
53.	Status of Thermal Vent	Limit Switch 993-ZSC-574	on/off, change in state
54.	Lime Slurry Density	Density Meter 996-AE-110	NA (Spec. Gravity -- no units), continuous

IX(A).F.4. Upon written request of the Executive Secretary, the Permittee shall perform sampling and analysis of the waste and exhaust emissions (performance test) to verify that the operating requirements established in the permit achieve the performance standards. This performance test shall be performed no later than two (2) years after the date Module IX(A) is modified to reflect the initial trial burn results, or two years after the date the Executive Secretary accepts the data from the prior performance test. The performance test required by this condition is not for the purpose of establishing new permit limits. The Permittee must follow the modification procedures in Condition I.D.5. for establishing new limits. However, the Permittee may combine a performance test with the required trial burn to establish new limits provided the appropriate modification procedures are followed.

IX(A).F.5. The Permitee shall comply with the Instrument Calibration Procedures Plan found in Attachment 18.

IX(A).F.6. The Permittee shall comply with the Quality Assurance and Calibration Procedures Plan for the Continuous Emissions Monitors found in Attachment 19 and 40 CFR §266, Appendix IX, Section 2.1.

IX(A).G. WASTE FEED CUT-OFF REQUIREMENTS

IX(A).G.1. The Permittee shall construct and maintain the systems specified below to automatically cut off the hazardous waste feed to the incinerator at the levels specified below. Hazardous wastes shall be fed to the incinerator only when all instruments required by this condition are on line and operating properly.

Operating parameters which deviate beyond allowable limits specified below for the secondary combustion chamber, the air pollution control equipment, or other parameters monitored downstream from the kilns will require automatic cutoff of waste feed to all combustion chambers. Operating parameters which deviate beyond allowable limits specified below for a single kiln (e.g., kiln temperature, pressure) require automatic cutoff of all waste feed to the specific kiln. Waste feed rates which deviate beyond allowable limits specified below will require automatic waste feed cutoff of waste to the specific waste feed mechanism.*

PARAMETER	IMMEDIATE CUTOFF LIMIT	DELAYED CUTOFF LIMIT	DELAY PERIOD
a. Low primary kiln exit gas temperature	1100°F	N/A	N/A
b. Reserved			
c. High primary kiln exit gas temperature	1500°F	N/A	N/A
d. Low burner kiln exit gas temperature	1300°F	N/A	N/A
e. High burner kiln exit gas temperature	1750°F	N/A	N/A
f. Low SCC exit gas temperature	2012°F	N/A	N/A
g. High SCC exit gas temperature	2325°F	N/A	N/A
h. High combustion gas flowate	N/A	110,000 acfm	30 seconds
i. High carbon monoxide concentration	100 ppm (60 minute rolling average)	500 ppm	60 seconds
j. High bulk solids feed rate to primary kiln	42,000 lb/hr (60 minute rolling average)	50,000 lb/hr	5 consecutive 1-minute averages
k. High energetic liquid wastes feed rate to primary kiln	3,150 lb/hr	3,000 lb/hr	5 minutes
l. Reserved			
m. Reserved			
n. High containerized (RAM) waste feed rate to burner kiln	10,000 lb/hr	N/A	N/A

PARAMETER	IMMEDIATE CUTOFF LIMIT	DELAYED CUTOFF LIMIT	DELAY PERIOD
o. High bulk solids (AUGER) feed rate to burner kiln	12,000 lb/hr (60 minute rolling average)	15,000 lb/hr	5 consecutive 1-minute averages
p. High pumpable sludge feed rate to burner kiln	8,000 lb/hr (60 minute rolling average)	10,000 lb/hr	5 consecutive 1-minute averages
q. High energetic liquid wastes feed rate to burner kiln	3,500 lb/hr	3,333 lb/hr	5 minutes
r. High total aqueous wastes feed rate to burner kiln	24,000 lb/hr	23,000 lb/hr	5 minutes
s. High aqueous wastes feed rate to nozzle 992-IN-001 of the burner kiln	16 gpm	N/A	N/A
t. High aqueous wastes feed rate to nozzle 992-IN-002 of the burner kiln	16 gpm	N/A	N/A
u. High aqueous wastes feed rate to nozzle 992-IN-003 of the burner kiln	16 gpm	N/A	N/A
v. High gaseous waste feed rate to burner kiln	420 lb/hr	400 lb/hr	5 minutes
w. High energetic liquid wastes feed rate to burner 993-BN-003 of the SCC	5,200 lb/hr	5,000 lb/hr	5 minutes
x. High energetic liquid wastes feed rate to burner 993-BN-004 of the SCC	5,200 lb/hr	5,000 lb/hr	5 minutes
y. High total aqueous waste feed rate to SCC	15,000 lb/hr	14,285 lb/hr	5 minutes
z. High aqueous wastes feed rate to nozzle 993-IN-001 of the SCC	7.5 gpm	N/A	N/A
aa. High aqueous wastes feed rate to nozzle 993-IN-002 of the SCC	7.5 gpm	N/A	N/A
bb. High aqueous wastes feed rate to nozzle 993-IN-003 of the SCC	7.5 gpm	N/A	N/A

PARAMETER		IMMEDIATE CUTOFF LIMIT	DELAYED CUTOFF LIMIT	DELAY PERIOD
cc.	High aqueous wastes feed rate to nozzle 993-IN-004 of the SCC	7.5 gpm	N/A	N/A
dd.	Low atomizing fluid pressure to the primary kiln energetic liquid wastes for burner 991-BN-009	65 psig	N/A	N/A
ee.	Low atomizing fluid pressure to the burner kiln energetic liquid wastes for burner 992-BN-010	50 psig	N/A	N/A
ff.	Low atomizing fluid pressure to the SCC energetic liquid wastes for burner 993-BN-003	70 psig	N/A	N/A
gg.	Low atomizing fluid pressure to the SCC energetic liquid wastes for burner 993-BN-004	70 psig	N/A	N/A
hh.	High primary kiln pressure	N/A	-0.1 inches W.C.	3 seconds
ii.	High burner kiln pressure	N/A	-0.1 inches W.C.	3 seconds
jj.	High SCC pressure	N/A	-0.1 inches W.C.	3 seconds
kk.	Low pH of scrubber recirculating liquor	3.0	N/A	N/A
ll.	Positive signal from any broken bag detector	N/A	positive signal	60 seconds
mm.	Low stoichiometric ratio of hydroxide (calcium or calcium and sodium) in the dry scrubber to chlorine in the feed	N/A	1.25	5 minutes
nn.	High gas temperature entering dry scrubber (either 996-TIR-291 or 996-TSHH-291 or both)	N/A	750°F	30 seconds

PARAMETER	IMMEDIATE CUTOFF LIMIT	DELAYED CUTOFF LIMIT	DELAY PERIOD
oo. High gas temperature entering baghouse (either 996-TIC-501 or 996-TSHH-259 or both)	400°F	N/A	N/A
pp. High gas temperature exiting scrubber SO-007 (either 998-TE-903 or 998-TSHH-285 or both)	180°F	N/A	N/A
qq. High gas temperature exiting scrubber SO-020 (either 998-TE-904 or 998-TSHH-518 or both)	180°F	N/A	N/A
rr. Low recirculating liquor flow to scrubber SO-007	N/A	300 gpm	5 minutes
ss. Low recirculating liquor flow to scrubber SO-020	N/A	300 gpm	5 minutes
tt. Loss of ID fan	fan off	N/A	N/A
uu. Loss of flame on primary kiln burner 991-BN-009	loss of flame	N/A	N/A
vv. Loss of flame on burner kiln burner 992-BN-010	loss of flame	N/A	N/A
ww. Loss of flame on SCC burner 993-BN-003	loss of flame	N/A	N/A
xx. Loss of flame on SCC burner 993-BN-004	loss of flame	N/A	N/A
yy. Opening of thermal vent	vent open	N/A	N/A
zz. Reserved			

IX(A).G.2. The Permittee shall operate the incinerator in such a way as to minimize opening the thermal vent.

For purposes of this permit condition, "during operation" shall mean at any time when hazardous wastes are being fed to the incinerator and for a period of one hour after all hazardous waste feeds have been terminated.

Opening of the thermal vent, during operation, requires:

! Automatic waste feed cutoff

Each time the emergency vent is opened during operation the Permittee shall verbally notify the Executive Secretary immediately. The Permittee shall also notify the Executive Secretary in writing within seven (7) days describing the incident and indicate the reason for the emergency vent opening. This notification shall also describe corrective measures taken by the Permittee to prevent future occurrences. In response to a notification of an emergency vent opening, the Executive Secretary may consider appropriate enforcement action to include the cessation of incinerator operation until adequate resolution of the problem occurs.

IX(A).G.3. Reserved

IX(A).G.4. The Permittee shall test the emergency waste feed cutoff system and associated alarms at least every 168 operating hours. This test shall demonstrate that all setpoints in Condition IX(A).G.1. will trigger the appropriate waste feed cutoff. During each test at least one of the setpoints shall demonstrate an actual waste feed cutoff. The value signalling this cutoff may be simulated. The test of the remaining setpoints may be simulated (i.e. an actual cutoff need not be performed). Records documenting these tests and results obtained shall be maintained in the operating record.

IX(A).H. RECORDKEEPING

IX(A).H.1. The Permittee shall record and maintain in the operating record for this permit, all monitoring, maintenance, recording, calibration, test, and

inspection data compiled under the requirements of this permit.

IX(A).H.1.a The Permittee shall maintain a separate maintenance log book for the instrument/monitors required in this Module. The log book shall contain all work, maintenance, calibration, testing, and inspection data as required for each instrument. Records for each instrument/monitor shall be maintained separately within the logbook.

IX(A).H.1.b. In addition to recording the 24-hour rolling average feed rates and the one hour block average feed rates for each of the carcinogenic metals (arsenic, beryllium, cadmium, chromium), the Permittee shall also record the one-minute averages used to calculate each one hour block average. In addition to recording the hourly rolling average feed rates for each of the non-carcinogenic metals (antimony, barium, lead, mercury, nickel, selenium, silver, thallium), the Permittee shall also record the one-minute averages used to calculate each hourly rolling average. These data shall be maintained in the operating record in accordance with Condition II.M.

IX(A).H.1.c. In addition to recording the 60 minute rolling average feed rate for bulk solids to the primary kiln, bulk solids to the burner kiln, and sludge to the burner kiln, the Permittee shall also record the one-minute averages used to calculate each hourly rolling average. These data shall be maintained in the operating record in accordance with Condition II.M.

IX(A).H.2. The Permittee shall record in a separate log book as part of the operating record for this permit, the date and time of all automatic waste feed cut-offs, including the triggering parameters, reason for the cut-off, and corrective action taken. The Permittee shall also record all failures of the automatic waste feed cut-off system to function properly and corrective actions taken.

IX(A).I. CLOSURE

The Permittee shall close the incineration system in accordance with Attachment 8.

IX(A).J. COMPLIANCE SCHEDULE

Reserved